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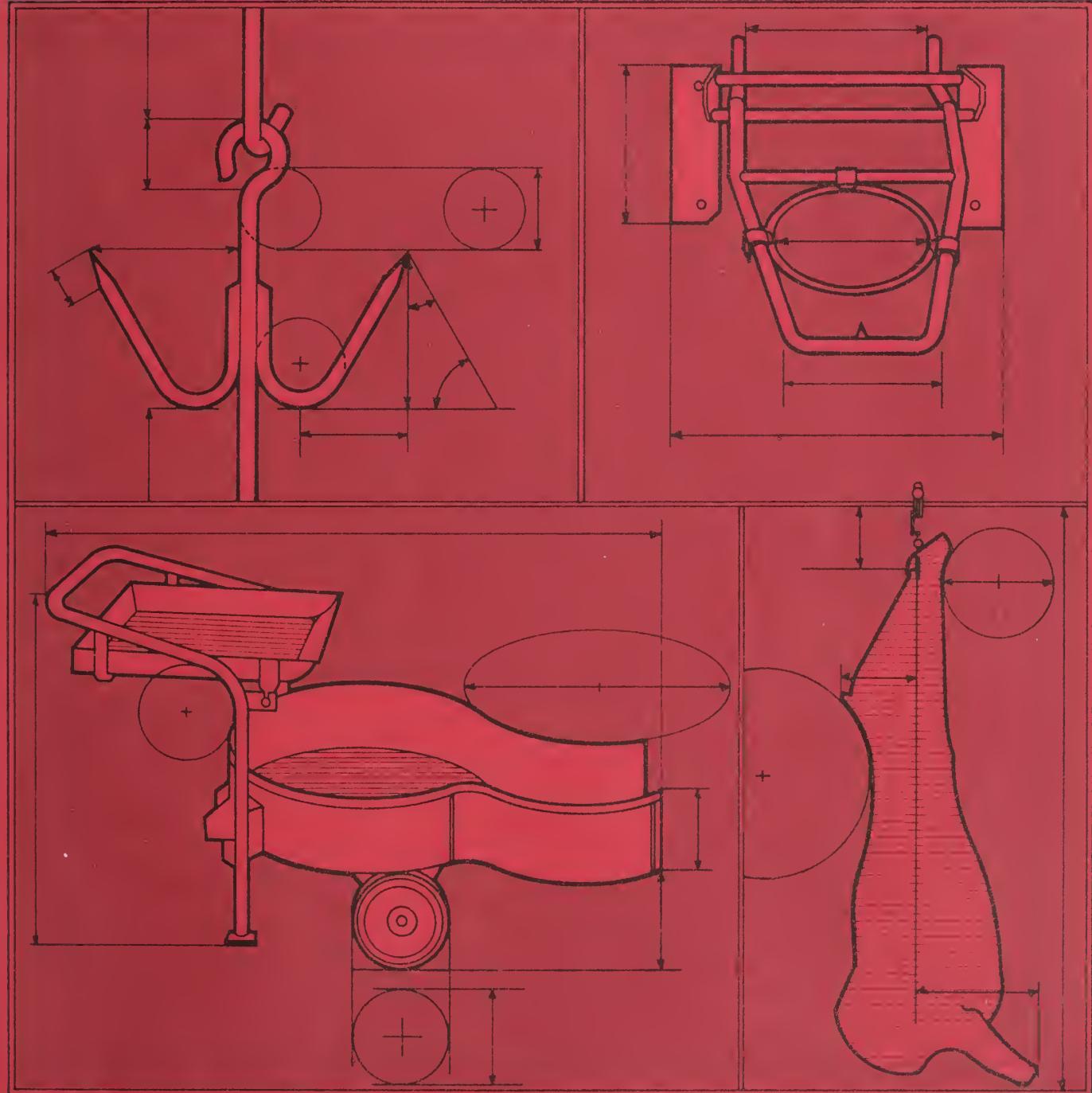


United States
Department of
Agriculture

Food
Safety and
Inspection Service

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Federal Facilities' Requirements for Small Existing Meat Plants



Preface

This publication contains information to aid plant owners and operators of small explosive mett plants. It does not have the effect of law or regulation, but is designed to supply general information and guidance. More detailed information on specific problems may be obtained by contacting the regional office serving your plant. See the map on page 23 for the regional office locations and geographical boundaries. The addresses can be found on page 23.



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Introduction

Some operators of small *existing* meat plants are uneasy at the prospect of having to meet Federal construction requirements. This publication is designed to clarify the facility and equipment requirements for small existing meat plants applying for Federal inspection.

This publication originated with the passage of the Wholesome Meat Act and the Wholesome Poultry Inspection Act, which brought a large number of plants under inspection within a short time. Today it serves all small existing meat plants coming under Federal inspection. This should be helpful when State inspection programs are relinquished since the States have had over 15 years to upgrade the facilities within their respective borders, and this should reduce the impact. This publication is updated to reflect these changes.

The photographs in this publication were taken in small plants. They are intended to demonstrate certain principles and to show how plant operators have solved some common problems. Inclusion of a particular brand of equipment in a photograph does not imply endorsement by USDA.

State authorities, through the National Advisory Committee for Meat and Poultry Inspection, were asked to comment on facility and equipment requirements as they apply to small plants. Their assistance has been of great value and many of their ideas and suggestions have been incorporated in this guidebook.

An important part of any inspection program involves facility and sanitation standards. The Federal standards governing construction, sanitation, and equipment are found in applicable parts of the Meat and Poultry Inspection Regulations. Copies of these regulations are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 (AC 202 783-3238).

Judgment of facility and equipment requirements is based on an evaluation of what is necessary to produce wholesome products in a sanitary environment and to provide for inspection needs. Needless to say, requirements vary considerably from plant to plant depending on the type and volume of operations. In most instances, the construction and equipment needs of a small slaughter or processing plant are considerably less than those of a large operation.

In the course of implementing the Federal Meat Inspection Act (FMIA) and the Poultry Products Inspection Act (PPIA), for small existing meat plants, it has become apparent that strict application of Federal facility and equipment regulations would cause considerable hardship. This is particularly true when a small number of animals or volume of product is handled. In many cases, the facility or equipment problems found in such plants can be corrected by procedural changes that can be tailored to the individual plant. Meat and Poultry Inspection Technical Services (MPITS) of the Food Safety and Inspection Service will have final responsibility for identifying those areas in which

procedural changes can be substituted for facility and equipment requirements.

The substitution of special procedural requirements for facilities normally required will not be approved unless such procedures assure sanitary operations and do not result in a deviation from required inspection norms. Provisions 331.3(a) & (b) of the Federal Meat Inspection Regulations were designed for application to plants in designated states and are not applicable to state inspected plants that voluntarily apply for Federal inspection.

When application is made for Federal inspection, such special procedures must be fully described on drawings or in the accompanying specification notes. Recommendations of circuit supervisors are essential in properly evaluating such proposals and will be given considerable weight in arriving at decisions.

In the event of a major change in production volume or in existing facilities or equipment that would affect the area for which special procedures have been approved, that approval will be reviewed to determine whether it should continue. Such changes may require that all facilities and equipment in the area be brought into conformance with basic requirements.

In addition, a change in ownership of a facility is cause for terminating and renegotiating agreements on using special procedures in lieu of meeting facility and equipment requirements. However, in instances where the prospective owner agrees to assume the obligations made by the present owner under a plant improvement plan, the FSIS regional director will grant inspection to the new owner except for the following reasons:

- (1) Deterioration of facilities during periods of vacancy;
- (2) Variations in operations between the old owner and the new owner;
- (3) Sanctions stated in section 401 of the Federal Meat Inspection Act and section 18 of the Poultry Products Inspection Act, as amended; and
- (4) Unacceptability of a plant's water supply or sewage disposal.

When new plants are built or modifications are made to existing plants, the substitution of special procedures in lieu of adherence to minimum facility and equipment requirements will not be considered. It is expected in these cases that the standards set forth in Agriculture Handbook 570, *U.S. Inspected Meat and Poultry Packing Plants—A Guide to Construction and Layout*, will be followed.

Regulations Governing Facilities and Sanitation

The regulations governing the meat inspection program of the United States Department of Agriculture (USDA) set the rules which federally inspected plants must follow. Some States now have similar requirements. The parts of these regulations that follow are reproduced from the Code of Federal Regulations, Title 9, Parts 200 to the end.

To serve as a basis for discussion, we have reproduced, in part, the Federal Meat Inspection Regulations and included commentaries on those sections for which it was felt explanations would be helpful. In some instances, alternative means of accomplishing the required objectives are suggested. The suggestions reflect the experience of inspection and industry personnel at the State and Federal levels.

§ 305.2 Separation of official establishments.

(a) Each official establishment shall be separate and distinct from any unofficial establishment except a poultry products processing establishment operated under Federal inspection under the Poultry Products Act or under State inspection.

(c) Inspection shall not be inaugurated in any building, any part of which is used as living quarters, unless the part for which inspection is requested is separated from such quarters by floors, walls, and ceilings of solid concrete, brick, wood, or similar material; and the floors, walls, and ceilings are without openings that directly or indirectly communicate with any part of the building used as living quarters.

Comment:

As written, this regulation permits the FSIS Administrator's discretion in determining the extent of separation required. In the past, the requirement has been administered quite rigidly. No communication by means of doorways, stairways, elevators, passageways, loading or unloading platforms, or loading courts was permitted between official and unofficial plants. Where interconnections exist, the Department will consider proposals on an individual basis, provided that transfer of uninspected product would be difficult or unusual. It is essential, however, that separation be maintained to the extent necessary to assure that unfit or uninspected produce does not become commingled with inspected product.

§ 305.3 Sanitation and adequate facilities.

Inspection shall not be inaugurated if an establishment is not in a sanitary condition nor unless the establishment agrees to maintain a sanitary condition and provides adequate facilities for conducting such inspection.

§ 307.1 Facilities for program employees.

Office space, including necessary furnishings, light, heat, and janitor service, shall be provided by official establishments, rent free, for the exclusive use for official purposes of the inspector

and other assigned program employees. The space set aside for this purpose shall meet with approval of the circuit supervisor and shall be conveniently located, properly ventilated, and provided with lockers suitable for the protection and storage of program supplies and with facilities suitable for program employees to change clothing if such facilities are deemed necessary. At the discretion of the Administrator, small plants requiring the services of less than one full-time inspector need not furnish facilities for program employees as prescribed in this section, where adequate facilities exist in a nearby convenient location. Laundry service for inspectors' outer work clothing shall be provided by each establishment.

Comment:

Separate office space will be required in plants where one or more inspectors are assigned on a continuing basis. Separate office space may not be required, however, in small plants, particularly if inspection is furnished on a patrol basis. The inspector should have a place to store supplies, change clothes if necessary, and complete reports. In many small plants, a regulation clothes locker may be all that is needed. This could also serve as a locker for USDA brands. The need for office space will depend to a great extent on the judgment of supervisory inspectors. They will require no more than is reasonable to service the needs of the inspection force.

§ 307.2 Other facilities and conditions to be provided by establishment.

When required by the circuit supervisor, the following facilities and conditions, and such others as may be found to be essential to efficient conduct of inspection and maintenance of sanitary conditions shall be provided by each official establishment:

(a) Satisfactory pens, equipment, and assistants for conducting ante-mortem inspection and for separating, marking, and holding apart from passed livestock those marked "U.S. suspect" and those marked "U.S. condemned." (Pens, alleys, and runways shall be paved, drained, and supplied with adequate hose connections for cleanup purposes.)

Comment:

Where large numbers of animals are handled, pens, alleys, and runways must be paved, drained, and supplied with hose connections as stated. See picture on page 3. When the number of animals handled is limited, requirements will be tailored to needs. If a slaughterer handles only 10 per week, for example, drains and hose connections for the pen area may not be necessary. The fundamental requirement is that the pens be maintained in a sanitary condition at all times and that there be no accumulation of mud, manure, or other material that might contaminate the carcass during dressing or allow flies to breed. The provision of separate pens for suspect animals will be waived for very small operations.

(b) Sufficient light to be adequate for proper conduct of inspection.

Comment:

The factor covered in this paragraph should not constitute problems for the small operator. At all times when the plant is operating, there should be sufficient natural or artificial light for plant operations and inspection. The Department has guidelines to determine whether lighting is adequate.

The intensity of light is measured by a light meter that registers the amount of light available in foot candles. Briefly, these requirements are as follows:

An intensity of at least 50 foot-candles is required at all inspection stations. This is the location where the inspector examines the lymph nodes of the head, the visceral organs, or the dressed carcass. Twenty-foot candles should be provided in the working areas of the rest of the plant. This is measured at the level of working surfaces (such as table tops). A 10 foot-candle intensity is required in livestock pens where ante-mortem inspection is performed and at the level of the foreshanks of carcasses in coolers.

(c) Racks, receptacles, or other suitable devices for retaining such parts as the head, tongue, tail, thymus gland, viscera, and all parts and blood to be used in the preparation of meat food products or medical products, until after the post-mortem examination is completed, in order that they may be identified in case of condemnation of the carcass; equipment, trucks, and receptacles for the handling of viscera of slaughtered animals so as to prevent contact with the floor; and trucks, racks, marked receptacles, tables, and other necessary equipment for the separate and sanitary handling of carcasses or parts passed for cooking.

Comment:

It is important to keep all parts of a carcass together and identified. The various parts and organs of different animals cannot be mixed together until after the carcass and all its parts have passed inspection. On very small kills, arrangements for identification and separation may be quite simple. They may be unnecessary when animals are handled one at a time, and the inspector is present at the time of slaughter and evisceration. Combination use of equipment is possible. For example, cattle heads can be flushed and washed, then inspected and even boned on the same head loop. Visceral organs can be inspected, then washed and trimmed on the same table so long as the table is properly sanitized between operations. See pictures of head flush cabinet, wall mounted head inspection rack, and inspection table on page 4. Such arrangements on very small kill floors would conserve space, yet provide essential sanitary inspection and operating tools.

The accumulation of uninspected or unclean visceral organs or parts in pails, tubs, or trays is not permitted. A suitably designed



Ante-mortem inspection pens with paved floor and suitable floor drain.

table for washing and trimming edible offal should be provided. As stated above, this may also serve as an inspection table.

The furnishing of equipment for separate handling of carcasses or parts "passed for cooking" is necessary only on large kills where it is profitable to save such material.

(d) Tables, benches, and other equipment on which inspection is to be performed must be of such design, material, and construction as to enable program employees to conduct their inspection in a ready, efficient, and clean manner.

Comment:

In general, post-mortem inspection consists of slicing and looking at certain lymph nodes, palpating certain organs, observing the dressed carcasses, and, in the case of cattle, slicing the cheek muscles. Large kills require fairly sophisticated equipment to



Head flush cabinet confines splash, can be used to flush, wash, inspect, and even bone the head.

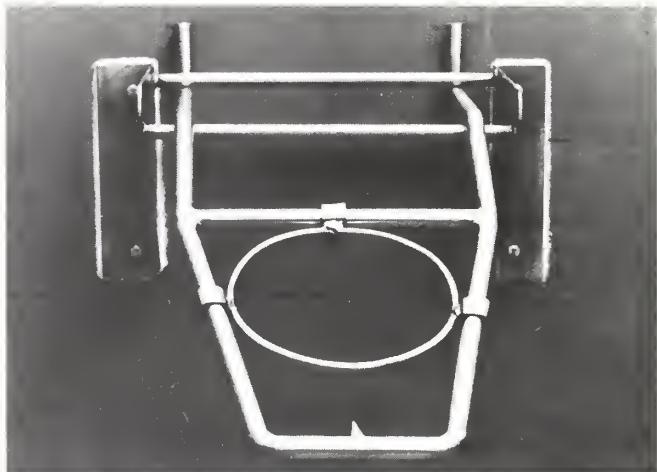
accomplish these inspections. This may include moving top tables, and for head inspections, chains. Let us examine the inspection requirements for very small kill floors; for example, those that completely dress and dispose of one animal before slaughtering the next.

Thoracic or other viscera to be saved for edible purposes is not to touch the floor during dressing procedures. Such viscera is to be inspected and otherwise handled on suitable equipment.

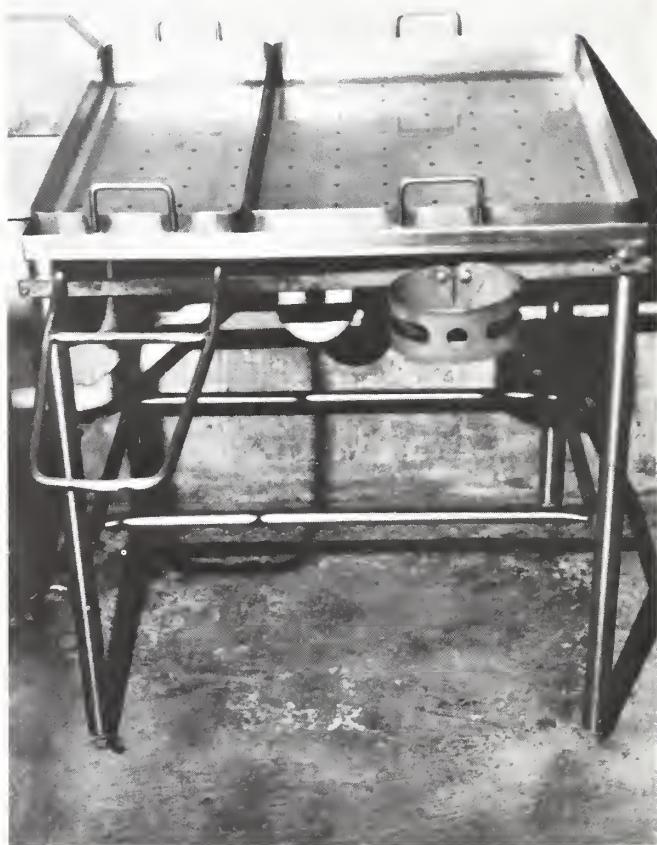
The plant must provide a viscera inspection truck as shown in the picture on page 5 or, alternatively, an inspection pan for the heart, lungs, liver and spleen plus a separate portable truck for inspection of the paunch and intestines.

Hogs—A large pan about 24" x 36" x 3" is necessary for examining the viscera. The head, if detached from the carcass, may be inspected in the same pan using a detachable head holder.

Calves—A large pan about 24" x 36" x 3" must be provided for abdominal viscera, and a separate pan about 12" x 36" x 3" is



Wall-mounted head inspection rack. The entire head loop (for large animals) is removable; a head loop for small animals can be inserted. The same rack can be used for flushing, washing, inspecting, and even boning the head.



Viscera inspection table with removable, perforated stainless steel pans. Visceral organs can be inspected, washed, and trimmed on this table, which also has removable head loops for large and small animals.

necessary for thoracic viscera. If desired, the small pan can be fitted with a head holder or, alternatively, a head inspection rack can be mounted separately.

Sheep and Goats—A large pan 24" x 24" x 3" is needed for abdominal viscera and, a separate smaller pan 12" x 24" x 3" is needed for thoracic viscera. The head is usually inspected while attached to the carcass.

Since different species are killed at different times, it is not necessary to provide separate pans for each species. The largest inspection pan necessary for the operation would suffice for all species. Pans should be at a convenient working height (about 34" from the floor) and removable for easy sanitation. A kill floor layout showing inspection features needed in slaughtering of all species is shown on page 19.

(e) Watertight metal trucks or receptacles for holding and handling diseased carcasses and parts, so constructed as to be readily cleaned; such trucks or receptacles to be marked in a conspicuous manner with the phrase "U.S. condemned" in letters not less than 2 inches high and, when required by the circuit supervisor, to be equipped with facilities for locking or sealing.

Comment:

A 50-gallon metal drum could serve this purpose in most cases if it is clean and in good repair. Provisions for locking and sealing the drum are not necessary under usual circumstances in small plants since the inspector supervises the denaturing of condemned carcasses or parts at the time of disposition. Such drums can be easily fixed so that the cover can be locked or sealed if this becomes necessary.

(f) Adequate arrangements, including liquid soap and cleansers, for cleansing and disinfecting hands, for disinfecting all implements used in dressing diseased carcasses, floors, and such other articles and places as may be contaminated by diseased carcasses or otherwise.

Comment:

Hand-washing basins operated by foot pedals must be provided in all slaughtering rooms. Hot water disinfecting tanks (commonly called sterilizers) must be provided to disinfect tools used in dressing diseased carcasses. See pictures of pedal operated hand-wash basin with attached hot water box and separate wall mounted hot water box on page 6. They must be large enough for immersion of the largest tool used. If there is not enough space to provide a sterilizer large enough for a splitting saw, consideration will be given to disinfecting saws with hot water from a hose outlet. This will have to be done in a way that prevents contamination of edible product in the room. The water provided in the sterilizer or hose outlet for the purpose of disinfecting contaminated implements must be 180° F. A thermometer must be attached to the water line at the outlet so that the inspector may check the water temperature. See picture on page 7. The hot water should be obtained from a central supply rather than by



Cattle viscera inspection truck. The upper pan can also be used to inspect viscera from other species.

mixing steam and water at or near the hose connection. Such mixing arrangements have not proved satisfactory.

The discharge from equipment such as lavatories or hand-washing basins should connect directly to the drainage system and not be allowed to flow over the floor to the nearest drain.

(g) In establishments in which slaughtering is done, rooms, compartments, or specially prepared open places, to be known as "final inspection places," at which the final inspection of retained carcasses may be conducted (competent assistants for handling retained carcasses and parts shall be provided by the establishment; final inspection places shall be adequate in size and their rail arrangement and other equipment shall be sufficient to prevent carcasses and parts passed for food or cooking, from being contaminated by contact with condemned carcasses or parts; they will be equipped with hot water, lavatory, sterilizer, tables, and other equipment required for ready, efficient, and sanitary conduct of the inspection; the floors shall be of such construction as to facilitate the maintenance of sanitary conditions and shall have proper drainage connections and when the final inspection place is part of a larger floor, it shall be separated from the rest of the floor by a curb, railing, or otherwise).

Comment:

The purpose of this regulation is to provide for separation of diseased or contaminated carcasses and parts from those which are wholesome. It also gives the veterinary inspector a place for close examination of retained carcasses. In small plants, such a final inspection place is usually not required. However, there should be some area, either on the killing floor or in the cooler, reserved for retained carcasses, parts, and body organs. This will be particularly important when the veterinarian is not present during slaughtering hours, but is on a patrol or call basis.

(h) Retention rooms, cages, or other compartments, and receptacles in which carcasses and product may be held for

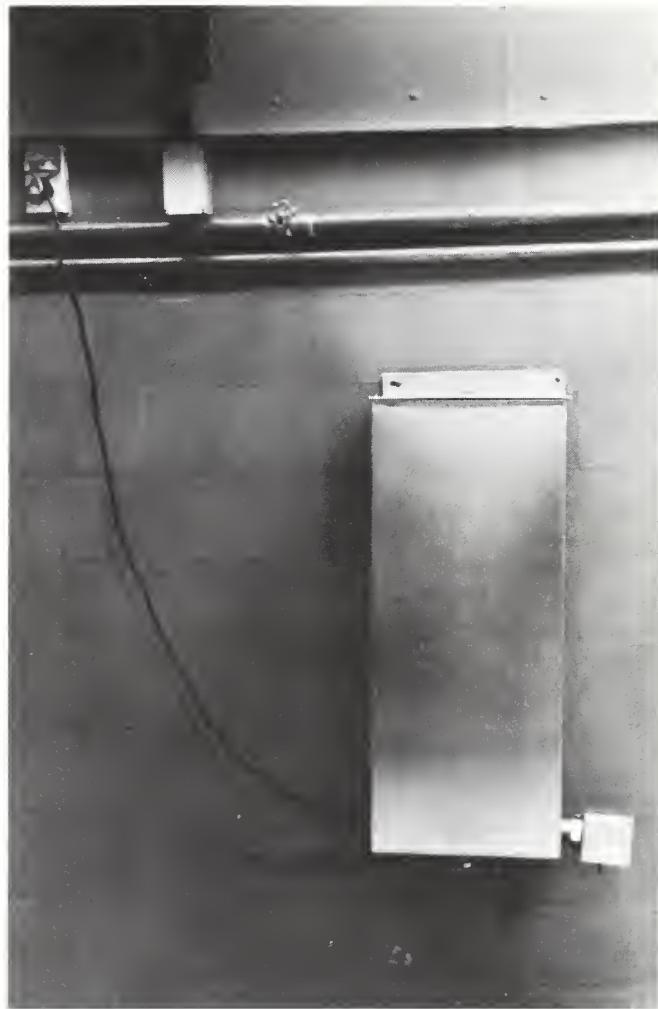


Foot-operated handwashing basin, with attached liquid soap dispenser and a hot water box for disinfecting hand tools. Such basins should be conveniently located in all exposed product handling rooms.

further inspection. (These shall be in such number and in such locations as the needs of the inspector in the establishment may require; they shall be equipped for secure locking or sealing and shall be held under locks or official seals furnished by the Department, the keys of such locks shall not leave the custody of program employees. Every such room, compartment, or receptacle shall be marked conspicuously with the phrase "U.S. retained" in letters not less than 2 inches high; rooms or compartments for these purposes shall be secure and susceptible to being kept clean, including a sanitary disposal of the floor liquids; establishment employees shall not enter any retention rooms or compartments or open any retention receptacles unless authorized by program employees.

Comment:

This requirement ties in with that above. As stated before, there



Electrically heated hot water box for disinfecting hand tools. The entire unit can be removed from the wall for cleaning and servicing.

should be a place provided for retention of carcasses and parts pending further inspection. In coolers with limited space, a common arrangement is a wire mesh cage suitable for locking that can be folded against the wall and out of the way when not in use. See picture on page 8.

In lieu of a retained cage, carcasses may be secured by attaching a device consisting of metal rods and/or chains "threaded" through the tissues and sealed or locked to some permanent structure such as an overhead rail or a post.

Viscera and/or product may be secured in a container, such as a closed drum, which can be sealed or locked.

(i) Adequate facilities, including denaturing materials, for the proper disposal of condemned articles in accordance with the

regulations in this subchapter. (Tanks for other rendering equipment which, under the regulations in this subchapter, must be sealed shall be properly equipped for sealing as specified by the regulations in part 314 of this subchapter or by the circuit supervisor in specific cases.)

Comment:

Federal regulations require that condemned material be either tanked or denatured under supervision. The denaturing consists of slashing the carcass, part, or material thoroughly, and liberally applying crude carbolic acid or other prescribed denaturant. The denaturing material is usually kept in a closed container and applied as needed with a water can, oil squirt gun, or other device.

(j) Docks and receiving rooms, to be designated by the operator of the official establishment, with the circuit supervisor, for the receipt and inspection of all products as provided in §318.3 of this subchapter.

Comment:

Section 318.3 referred to here, deals with meat and ingredients of meat products, such as spices, that are to be brought into an official establishment. In small plants, a special dock or receiving room for this purpose would not be necessary. There would, however, have to be a workable arrangement between the plant officials and the inspector to assure that the inspector can inspect all meat and other materials brought into the plant.

(k) Suitable lockers in which brands bearing the official inspection legend and other official devices (excluding labels) and official certificates shall be kept when not in use (all such lockers shall be equipped for sealing or locking with locks or seals to be supplied by the Department; the keys of such locks shall not leave the custody of Program employees.)

Comment:

This could be a regular clothing locker or any other suitable metal container capable of being secured with a padlock. In plants where office space is limited, it could be the same locker used to store the inspector's supplies, as pointed out under section 307.1.

§ 308.1 Examination and specifications for equipment and sanitation prior to granting inspection.

Prior to the inauguration of inspection, an examination of the establishment and premises shall be made by an inspection program employee, who will specify the requirements for sanitation and the necessary facilities for inspection in accordance with the regulations in this part and part 307 of this subchapter.

§ 308.2 Drawings and specifications to be furnished in advance of construction.

Drawings and specifications as prescribed in part 304.2 of this subchapter for remodeling any official establishment or part



A thermometer, located in the hot water line to ensure that water temperatures are appropriate for intended purposes.

thereof, and for any new structures to be used in an official establishment or part thereof shall be submitted to the Administrator and approval obtained for the plans in advance of construction.

Comment:

In approving drawings, USDA will make allowances for variances from the norms in existing construction if the premises can be kept clean, wholesome meat can be produced, and necessary inspection features can be provided. Proposals for new construction or additions to existing construction should fully comply with the requirements of these regulations and with the guidelines in Agriculture Handbook 570. The regulations require submission of two sets of complete drawings and four sets of specifications.

§ 308.3 Establishments, sanitary condition, requirements.

(a) Official establishments shall be maintained in sanitary condition, and to this end the requirements of this section shall be complied with.

(b) There shall be abundant light, of good quality and well distributed, and sufficient ventilation for all rooms and compartments to ensure sanitary conditions.

Comment:

Ventilation—Where hot carcasses, hot water, or other liquids are exposed to cold air, considerable vapor may develop. If this vapor interferes with the proper conduct of operations and inspection, or causes condensation and dripping, it must be eliminated. This problem is usually easily solved with space heaters to warm the air or fans to exhaust the vapor.

(c) There shall be an efficient drainage and plumbing system for the establishment and premises, and all drains and gutters shall be properly installed with traps and vents approved by the circuit supervisor.

Comment:

The number, location, and size of drain outlets and lines depend on the type and volume of the operation. Where wet operations such as slaughtering and curing are conducted, drains and hose outlets are a must. Drains may not be required in areas such as very small carcass chill rooms or meat storage rooms in existing buildings if the room can otherwise be kept clean, dry, and free of offensive odors. When drains are installed, they must be vented and properly trapped. This means U or P shaped traps are acceptable. However, an S, bell, crown-vented, or any trap that depends on movable parts for its seal is not acceptable. The drain inlets must have covers to prevent the entry of rodents.

(d) (1) The water supply shall be ample, clean, and potable, with adequate facilities for its distribution in the plant and its protection against contamination and pollution. Every establishment shall make known and, whenever required by the circuit supervisor, shall afford opportunity for inspection of the source of its water supply, the storage facilities, and the distribution system. Equipment using potable water shall be so installed as to prevent back-siphonage into the potable water system. Nonpotable water is permitted only in those parts of official establishments where no edible product is handled or prepared, and then only for limited purposes such as on ammonia condensers not connected with the potable water supply, in vapor lines serving inedible product rendering tanks, in connection with equipment used for hashing and washing inedible products preparatory to tanking, and in sewer lines for moving heavy solids in the sewage. Nonpotable water is not permitted for washing floors, areas, or equipment involved in trucking materials to and from edible product departments; nor is it permitted in hogscalding vats, dehairing machines, or



Cage for retained (carcasses and/or products), in a walk-in cooler. When not in use, both gates can be folded flat against the cooler walls.

vapor lines serving edible product rendering equipment, or for cleanup of shackling pens, bleeding areas, or runways within the slaughtering department. In all cases, nonpotable waterlines shall be clearly identified and shall be separated from the potable water supply line to assure against accidental contamination. There can be some method of quickly connecting the two, located outside the plant, if necessary for fire protection.

Comment:

For water to be considered potable, it must meet the standards of the U.S. Public Health Service. This must be certified by laboratories acceptable to the State in which the plant is located. If water is clean and free of harmful bacteria, chemicals, and noxious odors, it should have no difficulty meeting these standards.

Back-siphonage involves the sucking back into water lines of materials from a piece of equipment or tank where the outlet from a water line is submerged. An example of this is a hose

connected to an outlet, the end of which is below the level of liquid in a tank of wash water. A sudden drop in pressure could cause this wash water to be sucked into the water lines contaminating the water supply. A positive air gap or other acceptable vacuum-breaking device prevents the back-siphonage of contaminating material.

(2) The circuit supervisor may permit the reuse of water in vapor lines leading from deodorizers used in the preparation of lard and similar edible product and in equipment used for the chilling of canned product after retorting provided the reuse is for the identical original purpose and the following precautions are taken to protect the water that is reused:

(i) All pipelines, reservoirs, tanks, cooling towers, and like equipment employed in handling the reused water are so constructed and installed as to facilitate their cleaning and inspection.

(ii) Complete drainage and disposal of the reused water, effective cleaning of the equipment, and renewal with fresh potable water are accomplished at such intervals as may be necessary to assure an acceptable supply of water for the purpose intended as determined by the inspector.

(iii) Effective chlorination (not less than approximately 1 part per million of residual chlorine at any point within the cooling system) of the reused water utilized for cooling canned product is maintained, but with the understanding that chlorination alone is not to be relied upon entirely or to be accepted in lieu of the requirements listed in subdivisions (i) and (ii) of this subparagraph.

Comment:

This would not affect the average small plant.

(4) An ample supply of water at not less than 180° F. shall be furnished and used for disinfecting equipment, floors, and walls which are subject to contamination by the dressing or handling of diseased carcasses, their viscera, and other parts. Whenever necessary to determine compliance with this requirement, conveniently located thermometers shall be installed by the operator of the official establishment to show the temperature of the water at the point of use. See picture on page 7.

Comment:

The water supply was discussed in some detail under §307.2(f). The hose line with water at 180° F. for disinfecting large implements such as saws and gut buggies could also be used for washing floors and walls which are contaminated. As an alternative to using water at 180° F. for disinfecting large pieces of equipment, walls, floors, and the like, such surfaces may be scrubbed with hot water and detergent, followed by disinfection with an authorized chemical disinfectant. Hot water disinfecting tanks providing water at a temperature of 180° F. are required, however, in the slaughter department for disinfecting hand tools.

Steam and electric elements are commonly used for heating water to the required temperature. See pictures on page 6.

(5) Hot water for cleaning rooms and equipment other than those mentioned in subparagraph (4) of this paragraph shall be delivered under pressure to sufficient convenient outlets and shall be of such temperature as to accomplish a thorough cleanup.

Comment:

Water for cleaning rooms and equipment should be hot enough to wash away the fat, blood, and meat juices associated with the processing of meat. Ordinarily, this means about 140° F. An equipment washing sink should be provided to wash utensils and small pieces of equipment. See picture on page 10. All equipment, such as cutting tables, stuffers, saws, and knives, must be thoroughly cleaned once a day or more often if necessary to remove all fat, grease, blood, and meat juices. The extent and nature of the plant operations will determine whether drains and hose outlets will be required.

(e) The floors, walls, ceilings, partitions, posts, doors, and other parts of all structures shall be of such materials, construction, and finish as will make them susceptible of being readily and thoroughly cleaned. The floors shall be kept watertight. The rooms and compartments used for edible product shall be separate and distinct from those used for inedible product.

Comment:

Small plants which have infrequent pickups and limited storage space for inedible product, may store the inedible products in edible coolers and freezers as long as they are denatured, properly marked, and sealed in watertight covered containers.

Comment:

Floors—Concrete, tile, brick, or other impervious material properly pitched to drains should be provided in areas where wet operations such as slaughtering or curing are conducted. Wood floors are not acceptable in such rooms. Wood floors that are reasonably free of cracks or floors that are covered with tile, linoleum, or plastic materials are acceptable (without drains) where limited cutting, fabricating, or other relatively dry operations are conducted if the floor can be kept sanitary.

Walls—In rooms where wet operations are conducted, the walls should be of steel troweled cement plaster, tile, glazed brick, or other acceptable material. Concrete or cinder block sealed with a plastic type paint is acceptable but not recommended.

Wood walls are acceptable in coolers where boxed product is stored if they are clean and in good repair. Smooth cement plaster or other materials mentioned above are preferred. Metal paneling, if properly caulked at the seams and rust resistant, is also acceptable. The important thing is that walls be smooth, washable, and free of cracks and crevices. Where meat is fabricated, it should not come into contact with walls. This can



An equipment washing sink. This well-designed, two-compartment arrangement permits soaking and washing in one basin, rinsing and draining in the other. This sink should be used only for equipment, not for washing hands or cuts of meat.

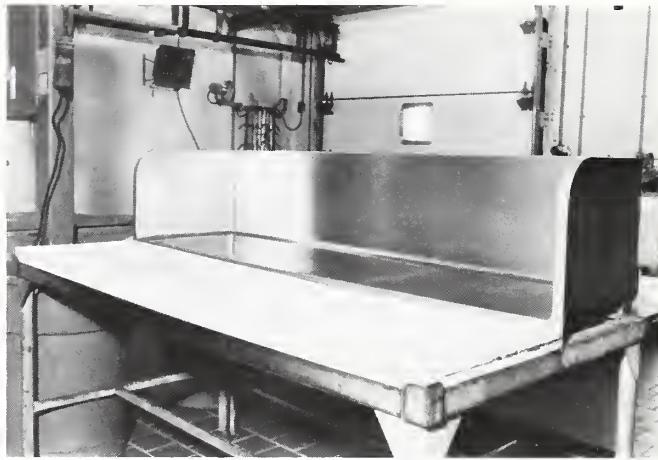
be prevented by installing rust-resistant metal backboards on tables or using other acceptable shielding. See picture on this page.

Ceilings—Ceilings should be cleanable and free of condensation and flaking paint. Finished wood, cement asbestos board, and other smooth washable materials will be considered acceptable provided they are in good repair. Uncovered insulation or porous materials such as acoustic tile are not acceptable. The use of paint on ceilings should be avoided in rooms where moisture and vapors collect. Paints tend to peel in such situations, creating a product contamination hazard.

Posts—These usually constitute a problem only if rails run close enough to them that they constantly come into contact with carcasses or cuts. In such cases, they may become splintered or coated with fat and meat juices. A common solution to this problem is to cover the point of contact with stainless steel or other rust-proof metal so that posts can be maintained in a sanitary condition.

Doors and Doorways—There is no specific requirement for doorway widths in existing construction. However, the doorway should be wide enough so that there is no contact between doorways and the product. The recommended width of doorways through which product is transferred on rails is 4½ feet, and 5 feet is recommended for doorways used by hand trucks. Such doors and doorways, if of wood construction, should be clad with rust-resistant metal with tight soldered seams. See pictures on page 11.

Separation of Edible and Inedible Rooms—In most slaughtering plants, inedible materials such as hides, feet, and intestines are accumulated until the end of the kill when they are picked up by



A stainless steel meat fabricating table with removable, hard plastic cutting board. The high back protects products and adjacent areas from soilage.

the rendering company or otherwise disposed of. There must be a room or compartment separate from the kill floor for storing such materials. It should be paved, drained, have impervious walls, and have a hot and cold water hose connection available. See pictures on page 12. If connecting directly to the kill floor, it should be separated by self-closing doors. It should be properly protected from insects and rodents and, if inedible materials are not promptly disposed of, refrigerated.

(f) Rails should be located and passageway space provided so that exposed product does not come in contact with posts, walls, and other fixed parts of the building, or with barrels, boxes, and other containers trafficked through holding and operating areas. Exposed product shall not be placed or stored beneath carcasses in coolers or holding areas.

(g) The rooms and compartments in which any product is prepared or handled shall be free from dust and odors from dressing and toilet rooms, catch basins, hide cellars, casing rooms, inedible tank and fertilizer rooms, and livestock pens.

(h) Every practicable precaution shall be taken to exclude flies, rats, mice and other vermin from official establishments. The use of poisons for any purpose in rooms or compartments where any unpacked product is stored or handled is forbidden, except under such restrictions and precautions as are prescribed by the regulations in this part or by the circuit supervisor in specific cases. The use of insecticides, rodenticides, and similar pest control substances in hide cellars, inedible product departments, outbuildings, or similar places, or in storerooms containing canned or tiered products is not forbidden; but only those approved by the Administrator may be used. So-called rat viruses shall not be used in any part of an establishment or the premises.



Cooler doors, clad in stainless steel for easy cleaning and inspection.



Cooler door jambs, also clad in stainless steel for easy cleaning and inspection.

Comment:

All doors and windows which open must be screened to keep out flies and other insects. Floors, walls, and ceilings must be kept in excellent repair to exclude rodents and vermin. Cracks and crevices in which roaches can harbor shall be eliminated. This is particularly important where there is heat and moisture such as in rendering or cooking areas.

Insecticides having a residual action are not permitted in rooms where edible product is handled. So-called "knock down" sprays may be used after meat is removed from the room if equipment or tables which it came in contact with are washed before reuse. Wall mounted dispensers or other devices that discharge or vaporize nonresidual insecticides are permitted in rooms where meat is handled only after all product is removed.

All rodenticides must be in approved containers. Rodenticides must be removed from edible product departments before operations are resumed. Certain compounds such as 1080 (sodium fluoracetate), arsenic, strichnine, thallium, yellow phosphorus

and parathion are so toxic that they may not be used in meat plants under any circumstances.

§ 308.4 Sanitary facilities and accommodations; specific requirements.

Adequate sanitary facilities and accommodations shall be furnished by every official establishment. Of these, the following are specifically required:

(a) Dressing rooms, toilet rooms, and urinals shall be sufficient in number, ample in size, and convenient in location. The rooms shall be provided with facilities to provide abundant light of good quality and well distributed. They shall be properly ventilated and shall meet all requirements of the regulations in this part as to sanitary construction and equipment. They shall be separate from the rooms and compartments in which products are prepared, stored, or handled. Where both sexes are employed, separate facilities shall be provided.



A refrigerated room for holding inedibles—hides, feet, intestines, and bones—for sometimes extended periods until they are picked up by a rendering company.

Comment:

Dressing rooms, as such, may not be necessary in small plants with only one or two employees who live nearby and come to work properly clothed for their jobs. The type of operation may enter into the decision on whether a locker room is necessary.

Toilet rooms shall be equipped with sanitary flush type toilets, hand-washing basins, liquid soap dispensers, and disposable towel dispensers. The toilets should not open directly into a work room, but should be separated by an intervening vestibule. Both the toilet room door and vestibule door should be self-closing. If the toilet room has no outside ventilation, mechanical ventilation should be provided by an electric fan connected to the light switch. The exhaust should be to the outside of the building. In plants with a limited number of workers, separate toilet rooms for each sex may not be required, provided this does not conflict with municipal or State requirements.



A hot-and-cold-water hose connection for cleaning the inedible room and other plant facilities and equipment. Note the thermometer in the hot water line.

In lieu of a vestibule between toilet rooms and workrooms, the toilet room could be equipped with an exhaust fan to the outside which remains in operation during working hours. Doors to such toilet rooms should have a one 1-inch space at the bottom or a louver in the lower panel.

(b) Acceptable lavatories, including running hot and cold water, soap, and towels, shall be placed in or near toilet and urinal rooms and also at such other places in the establishment as may be essential to assure cleanliness of all persons handling any product.

Comment:

Standard hand-washing basins operated with foot pedals, such as those furnished by packing house equipment firms, must be provided on kill floors. In nonproduction areas, the existing hand-operated sinks will be accepted if they furnish hot and cold running water through a mixing faucet, are of sanitary

construction, and are in good repair. Conveniently located pedal operated hand-washing facilities are a must in areas where meat is being ground, mixed, or stuffed. See picture on page 6. Lavatories operated by foot pedals will be required in all new construction, additional installations, or repalcements.

(c) Toilet soil lines shall be separate from house drainage lines to a point outside the building, and drainage from toilet bowls and urinals shall not be discharged into a grease catch basin.

Comment:

The purpose of this requirement is to prevent meat from becoming directly or indirectly exposed to contamination from dangerous wastes. Small plant owners can sometimes take practical steps to correct existing installations with a minimum of disruption. Acceptable back flow prevention devices will be allowed in lieu of separation in existing construction.

Joined toilet and house drainage lines within the buildings will be accepted if there is a regular maintenance program to ensure free flow and to prevent blockage. In the event of flooding from blocked drain lines, all contaminated floors, walls, and equipment will be thoroughly cleaned and disinfected.

(d) Properly located facilities shall be provided for cleaning and disinfecting utensils and hands of all persons handling any product.

§ 308.5 Equipment and utensils to be easily cleaned; those for inedible products to be so marked; evaluation of equipment and utensils.

(a) Equipment and utensils used for preparing and otherwise handling any edible product or ingredient thereof in any official establishment shall be of such material and construction as, in the judgment of the Administrator, will facilitate their thorough cleaning and ensure cleanliness in the preparation and handling of all edible products, and otherwise avoid adulteration and misbranding of such products. In addition to these requirements, equipment and utensils shall not in any way interfere with or impede inspection procedures. Receptacles used for handling inedible material shall be of such material and construction that, in the judgment of the Administrator, their use will not result in adulteration of any edible product or in unsanitary conditions at the establishment, and they shall bear conspicuous and distinctive marking to identify them as only for such use and shall not be used for handling any edible products.

Comment:

Equipment upon which meat is cut, cured, stuffed, ground, or otherwise processed shall be of rust-resistant metal. Stainless steel is preferred because it resists rust and corrosion and can be easily cleaned. See picture on page 10. Although its initial cost is high, it saves money in the long run.

Hardwood cutting boards are permitted on cutting surfaces of

boning tables if smooth and free of cracks. They must be removable for easy cleaning. Hard rubber or plastic panels are also available for this purpose; they are much preferred because they are nonabsorbent and, therefore, easily disinfected. See picture on page 10.

The use of wood equipment in slaughtering departments is not permissible. Only rust-resistant metal or approved plastics (nontoxic, shatterproof) will be accepted in areas where wet operations are conducted. A possible exception might be existing knocking boxes if they are kept clean and in good repair.

The use of wood in other rooms will depend on whether it is exposed directly or indirectly to moisture and fat and whether it can be kept clean and free of odors.

The use of wood equipment in meat processing plants is limited. Demountable hardwood racks may be used for storage of meat in dry cure if the boards are free of nails, cracks, splinters, and knots. Wood may be acceptable for racks, pallets, closets for dry stores, or for storage of packaged product in freezers. It should not be considered, however, as a suitable material for containers for meat in the plant or for storage racks for meat in coolers.

All equipment must be constructed so it can easily be kept clean. It should be free of cracks and crevices and able to be taken apart as necessary for thorough cleaning. All surfaces which meat or juices may come into contact with should be accessible for inspection.

The 50-gallon drums commonly provided by rendering companies are acceptable for inedible materials only. They must be kept clean, inside and out, and in good repair. Containers shall be marked inedible with large letters.

§ 308.6. Scabbards for knives.

Scabbards and similar devices for the temporary retention of knives, steels, triers, and the like by workers and others at official establishments, shall be constructed of rust-resisting metal or other impervious material, shall be of a type that may be readily cleaned, and shall be kept clean.

Comment:

This rules out the nonremovable wood knife racks often seen attached to butcher blocks or walls. Such racks shall be made of metal and capable of being taken apart for cleaning.

§ 308.7 Rooms, compartments, and so on to be clean and sanitary.

Rooms, compartments, places, equipment, and utensils used for preparing, storing, or otherwise handling any product, and all other parts of the establishment shall be kept clean and in sanitary condition. There shall be no handling or storing of materials which create an objectionable condition in rooms, compartments,

or places where any product is prepared, stored, or otherwise handled.

Comment:

A separate room or area need not be provided for inedible material if it can be handled so that it does not create a nuisance. For example, intestines, paunch contents, feet, and hides might be accumulated on the kill floor in clean, watertight drums with close fitting covers if there is sufficient space to store them out of the way until close of the day's operations.

§ 308.8 Operations, procedures, rooms, clothing, utensils, etc., to be clean and sanitary.

(a) Operations and procedures involving the preparation, storing, or handling of any product shall be strictly in accord with clean and sanitary methods.

(b) Rooms and compartments in which inspections are made, and those in which livestock are slaughtered or any product is prepared shall be kept sufficiently free of steam and vapors to enable Program employees to make inspections and to ensure clean operations. The walls, ceilings, and overhead structure of rooms and compartments in which product is prepared, handled, or stored shall be kept reasonably free from moisture to prevent dripping and contamination of product.

(c) Butchers and others who dress or handle diseased carcasses or parts shall, before handling or dressing other carcasses or parts, cleanse their hands with liquid soap and hot water, and rinse them in clean water. Implements used in dressing diseased carcasses shall be thoroughly cleansed with hot water having a minimum temperature of 180° F. or in a disinfectant authorized by the Administrator, followed by rinsing in clean water. The employees of the establishment who handle any product shall keep their hands clean, and in all cases after visiting the toilet rooms or urinals shall wash their hands before handling any product or implements used in the preparation of product.

Comment:

The accepted method for disinfecting contaminated implements is to rinse off the contaminant and then rinse them with water at 180° F. Chemical disinfection is used only in emergency situations when water at that temperature is not available. Special procedures are applied to situations where anthrax is detected. These are detailed in section 310.9 of the regulations.

§ 308.9 Protective handling of products.

Products shall be protected from contamination from any source such as dust, dirt, or insects during storage, loading, or unloading at and transportation from official establishments.

§ 308.10 Slack barrels and similar containers and means of conveyance used for product; paper in contact with product.

(a) When necessary to avoid contamination of product with wood splinters or similar contaminants, slack barrels and similar containers and the cargo space of trucks, railroad cars, or other means of conveyance shall be lined with suitable material of good quality before packing.

(b) Slack barrels and similar containers and trucks, railroad cars, and other means of conveyance in which any product is transported shall be kept in a clean and sanitary condition.

§ 308.11 Burlap wrapping for meat.

The use of burlap as wrapping for meat will not be permitted unless the meat is first wrapped with a good grade of paper or cloth of a kind which will prevent contamination with lint or other foreign matter.

§ 308.12 Second-hand tubs, barrels, and other containers.

Secondhand tubs, barrels, and boxes intended for use as containers of any product shall be inspected when received at the official establishment and before they are cleaned. Those showing evidence of misuse rendering them unfit to serve as containers for food products shall be rejected. The use of those showing no evidence of previous misuse may be allowed after they have been thoroughly and properly cleaned. Steaming, after thorough scrubbing and rinsing, is essential to cleaning tubs and barrels.

Comment:

Reconditioning of secondhand containers must be done in the plant. Therefore, only those plants having proper cleaning equipment and ample live steam can consider the use of such containers.

§ 308.13 Inedible operating and storage rooms; outer premises, docks, driveways, approaches, pens, alleys, flybreeding material; other conditions.

All operating and storage rooms and departments of official establishments used for inedible materials shall be maintained in acceptably clean condition. The outer premises of every official establishment, including docks and areas where cars and vehicles are loaded, and the driveways, approaches, yards, pens, and alleys, shall be properly paved and drained and kept in clean and orderly condition. All catch basins on the premises shall be of such construction and location and shall be given such attention as will ensure their being kept in acceptable condition as regards odors and cleanliness. Catch basins shall not be located in departments where any product is prepared, handled, or stored. The accumulation on the premises of official establishments of any material in which flies may breed, such as hog hair, bones, paunch contents, or manure, is forbidden. No other conditions that may result in adulteration of product or interfere with inspection shall be allowed in any official establishment or on its premises.

Questions and Answers

Many plant owners have questions about applying facilities standards to specific problems in their own plant. They want to know whether they will have to pave a floor, replace a piece of equipment, or raise their rails. Because many of these questions can only be resolved by actual knowledge of the type and scope of operations and other factors, it would be presumptuous to try to solve them all here. Each plant has its own individual character and problems, and must be treated individually. The following questions are typical, however, of those asked by many small processors. The answers, if they do not solve some specific problems, may at least indicate the reasoning that will be used in reaching a solution. Final judgment for plants applying for Federal inspection will rest on an evaluation of drawings and other data presented to Meat and Poultry Inspection Technical Services (MPITS), Food Safety and Inspection Service (FSIS).

Q. Can different kinds of livestock be slaughtered on the same kill floor?

A. Yes, provided there is sufficient space and proper equipment for handling each species, and they are slaughtered at different times.

Q. How does USDA feel about the use of sawdust?

A. USDA doesn't like it. Sawdust has a habit of getting on meat, may harbor sour particles of meat and fat, and contributes to mold formation. Wrapping paper can be used under carcasses in coolers without drains to contain drips from carcasses.

Q. Can I bleed or skin their heads while the carcass is resting on the floor?

A. If sufficient clearance cannot be provided in existing premises to hoist cattle free of the floor for bleeding and head skinning, the following procedure will be considered acceptable:

Bleeding of stunned animals is to be accomplished with the carcass raised to the maximum height attainable with existing hoists and rail heights.

Heads may be handled by any of the following methods:

1. If the entire head (including the tongue) is to be disposed of as inedible after completion of required inspection procedures, it still must be reasonably clean for inspection.

2. Heads may be skinned and severed from the carcass while the carcass lays on the floor, provided the skinned portions of the head are not allowed to come in contact with the floor, the unskinned carcass, or other fixed objects which might contaminate the skinned head. This may be accomplished by using nose tongs or a hook inserted into the junction of the mandible. A skinning cradle is desirable from the standpoint that it simplifies this procedure by keeping the carcass off the floor. See picture on page 16.

3. Heads may be skinned as part of the total skinning procedure conducted at or about the half-hoist position. Prevention of contact and possible contamination must be to the same extent as noted in 2 above.

Q. May wooden cutting boards and blocks be used?

A. Hardwood cutting boards and blocks, whether laminated or solid, may be used on the same basis as rubber or plastic. All cutting boards shall be in the shortest practical sections and easy to keep clean. Cutting surfaces must be maintained in a sanitary condition at all times. They must be smooth, relatively impervious, devoid of cracks and crevices, and free of objectionable odor.

Q. Must cooler and freezer doors be clad with metal?

A. Doors should be of such material construction and finish that they can be readily and thoroughly cleaned and that they will not contaminate or adulterate product passing through them. Doors meeting these criteria will be acceptable. See picture on page 11.

Q. How many lavatories and sterilizers must be provided?

A. Acceptable, conveniently located lavatories must be provided to assure proper cleanliness of all food handlers. 180°F water-dip tanks (disinfecting tanks) or other suitable means must be provided for disinfecting implements that may come in contact with diseased carcasses or parts. See pictures on page 6. Except where certain operations are conducted that may cause contamination, such as slashing pork jowls or boning operations, disinfectants are not generally required in processing rooms. The number and location of lavatories and disinfecting tanks is dictated by the size and types of operation conducted in the plant. When plant drawings are submitted for approval, the location of lavatories and disinfecting tanks must be clearly shown.

Q. Are dial thermometers required on all hot water lines?

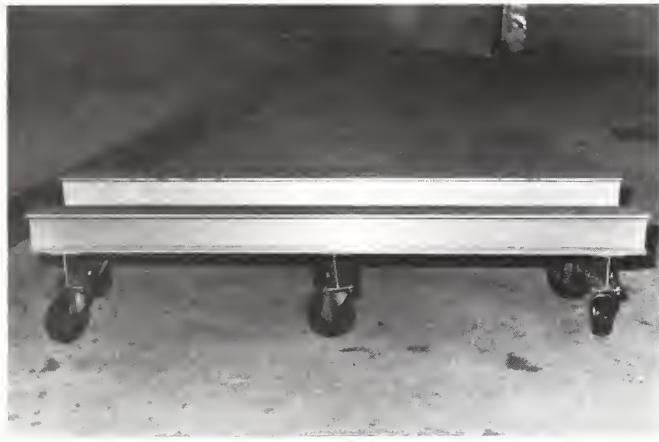
A. Thermometers are required in all hot water outlets; they are necessary only in critical areas, such as viscera truck disinfection.

Q. Can exposed ceiling joists be made of wood?

A. The acceptability of exposed ceiling joists and supports depends on whether their condition contributes to product adulteration. If the joists are of a material and construction that aids in proper maintenance and does not contribute to an unsanitary condition of the establishment, they will be acceptable.

Q. What is Agriculture Handbook 570? Where can I get a copy of it?

A. Agriculture Handbook 570 is a guidebook similar to this which offers suggestions and guides to plant owners and



A rust-resistant metal skinning cradle that keeps the carcass off the floor during skinning operations.

architects in designing efficient, properly constructed meat and poultry packing plants. Much of the information in it is directed to large volume operations because in the past, these have been the ones most often seeking Federal inspection. The principles involved, however, can be applied to plants of any size, although some of the specific recommendations may not apply to smaller ones. Agriculture Handbook 570 can be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Q. Are racks or shelves of wood construction acceptable for storing meat in coolers?

A. No. Because wood is absorbent and difficult to clean, metal construction for storage racks is preferred. See pictures on page 17. Wood racks are permissible for storing packaged meat in freezers.

Q. I hang my meat cuts on metal hooks suspended from wood 2 by 4's in my cooler. Is wood all right for this purpose?

A. No. The meat often comes in contact with such hangers and creates sanitation problems. The 2 by 4's should be replaced with rust resistant metal.

Q. What metals are considered rust resistant?

A. Stainless steel, hot dip galvanized steel, and aluminum are commonly used metals. Because of such factors as strength, weight, tensility, resistance to abrasion and corrosion, cost, and others, a metal acceptable for one purpose may not work for another. Stainless steel, of course, is the metal of choice for food-handling equipment. Although high in initial cost, it is generally cheapest in the long run.

Q. What are minimum construction standards for smokehouses?

A. Smokehouses need not be constructed of rust-resistant metal although many are. Black iron, smooth cement, bricks, and tile are all acceptable materials for floors, walls, and ceilings. A drain should be provided to permit frequent washing to remove deposits.

Q. Are black iron kettles acceptable for rendering lard?

A. Yes, black iron for rendering, settling and transfer (pipes) of lard is permissible but not desirable. Rust-resistant metal equipment is preferred. See picture on page 18. Rust-resistant metal is required for equipment used to accumulate or transfer fresh fats prior to rendering.

Q. I kill about five cattle a day. Would I need separate tables for inspection, for washing and trimming of offal, and for boning heads?

A. There is no reason why one piece of equipment should not serve several uses in an operation of this size. It need only be appropriate for its intended uses.

Q. Must I have an equipment wash room?

A. In most small plants an equipment wash room, as such, will probably not be required if there is space available to properly disinfect larger pieces of equipment as needed without creating a nuisance. At the very minimum, a utensil washing sink should be provided for washing small pieces of equipment and hand tools. See picture on page 10.

Q. What rail heights does USDA recommend?

A. The shortest distances measured from platform or floor to rail are as follows:

Cattle:

Bleeding rail—16 feet
Dressing rails—11 feet
Beef cooler rails—11 feet
Beef quarter rails—7 feet 6 inches

Hogs:

Bleeding rail to sticker's platform—10 feet 6 inches
Dressing rails—11 feet
Cooler rails (heads attached)—10 feet
Cooler rails (heads removed)—9 feet
Calves and Sheep
Bleeding rail calves—11 feet
Bleeding rail sheep—9 feet
Cooler rails calves—gambrels 7 feet 6 inches above floor
Cooler rails sheep—hooks 6 feet 6 inches above floor

Where more than one type of livestock is slaughtered on the same layout, requirements for the largest kind of animal would apply.



A storage rack for small tote boxes. The removable trays protect exposed products on shelves from any debris on the bottoms of tote boxes on upper shelves.



A storage rack for large tote boxes. Such open storage is acceptable if the tote boxes are kept off the floor and the bottoms are kept clean.

Q. Will USDA approve a plant that has rails lower than those recommended?

A. In existing construction, rails lower than standard will be accepted if measures are taken to protect the meat from contamination. For example, if dressing and cooler rails are less than standard height, some or all of the carcasses may have to be quartered or otherwise divided before they can be hung or transported. The lowest part of the meat should be at least a foot from the floor.

In new construction, the distances listed above and others specified in Agriculture Handbook 570 must be followed.

Q. I have a crushed stone drive around my plant and up to the dock. Must it be paved?

A. It depends on the amount of traffic, the condition of the roadway, the types of vehicles, and other factors. If trucks are washed on the premises, a paved drained area would be necessary. If the operation is limited and lack of paving presents no problems from the standpoint of dust, mud, or sanitation, paving will not be required.

Q. Will metal cladding of my present wood benches and tables be acceptable?

A. In most cases, no. Metal cladding of such equipment usually creates more problems than it solves. Sheet metal of a gauge heavy enough to resist puncture, denting, and warping might just as well be used to make a new piece of all-metal equipment.

Examples of Methods to Meet Facility Requirements



A stainless steel kettle for cooking sausage and rendering lard. The kettle can be easily washed and drained.

Q. I understand that USDA will not require 5-foot doorways in existing plants. Does this mean all of my doorways must be clad with metal?

A. No, except those which meat may come in contact with as it passes through on rails or trucks—for example, a cooler door. See pictures on page 11. The purpose of this requirement is to assist in the sanitation of surfaces which meat frequently touches and to prevent contamination of meat with wood splinters. Where these factors do not apply, metal cladding may not be necessary.

Q. I have a counter with a formica top on which I wrap steaks and roasts for freezer storage. Must this be replaced with a metal table?

A. It may be acceptable for this purpose if it is in good repair and free of crevices and exposed wood. Such surfaces are not considered acceptable for such operations as boning or fabricating, however. See picture on page 10 that shows the proper surface for these types of operations.

While large operations require complex and often expensive equipment to permit post-mortem inspection, this is not true of small operations. On many small floors, each animal is completely dressed, washed, and placed in the cooler before the next one is dispatched. Such a procedure makes possible the use of simple equipment for inspection that may serve more than one use. For example, a single beef head loop may be used for flushing and washing the head prior to inspection, for inspecting it, and for removing the tongue and cheek meat after inspection. See pictures on page 4. The following layout shows a possible arrangement with multiple-use equipment in an operation where animals are completely dressed one at a time.

Equipment Code

- A. Head Rack
- B. Collapsible Stunning Pen
- C. Stunning Pen in Retractable Position
- D. Cupola
- E. Hoist on "I" Beam
- F. Skinning Cradle in Stored Position
- G. Skinning Cradle in Position for Use
- H. Rail Lander
- K. Paunch Truck

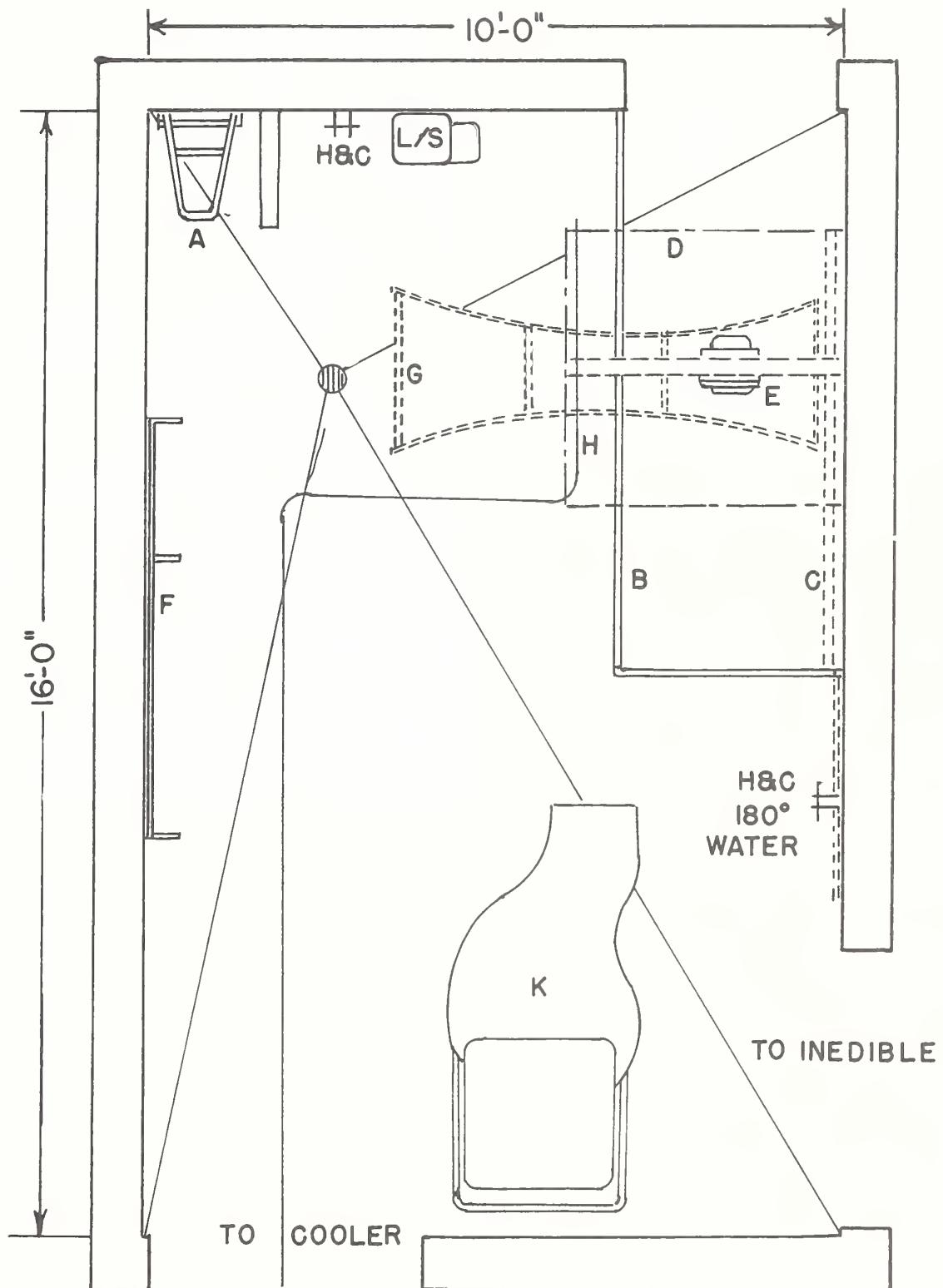
Operation Sequence

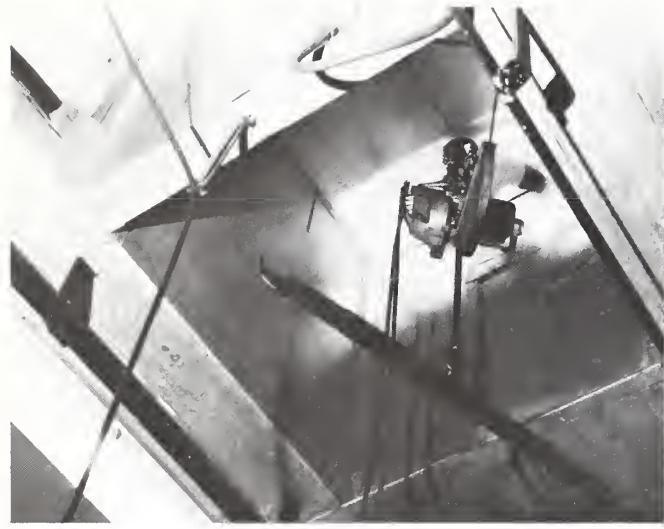
- Drive
- Stun
- Retract Stunning Pen
- Shackle and Hoist
- Position Blood Drum and Cone
- Stick
- Remove Head
- Position Skinning Cradle
- Land on Cradle
- Remove Feet, Open and Side Cattle
- Insert Spreader—Half Hoist
- Remove Udders and Pizzles
- Skin Rounds—High Back
- Drop Bung—Split Aitch Bone
- Hoist Cattle
- Remove Skinning Cradle
- Drop Hide
- Eviscerate
- Split
- Wash

Clearances on Cattle Kills

This problem can be divided into two parts: (1) Sufficient clearance for cattle to be hoisted completely off the floor for bleeding, head skinning, and evisceration; and (2) sufficient clearance for the dressed split carcass to be transported to and stored in the cooler. Let us look at each problem separately.

- 1. Some rooms in which cattle are now slaughtered do not





Interior view of cupola installed in building with low ceilings. A cupola provides space necessary for bleeding and head skinning with the carcass off the floor. Note electric hoist in cupola dome for suspending carcass.



Carcass suspended from hoist in cupola dome.

have sufficient ceiling height to install 16-foot bleeding rails. Some small plants have solved this problem by building cupolas to provide the necessary clearance for hoisting the cattle after stunning. An electric hoist installed at the top of the shaft raises the carcass during various stages of the operation to convenient working heights. See pictures on this page. Such cupolas can be installed, in most instances, with a minimum investment. In addition to permitting a more sanitary operation, they contribute significantly to overall efficiency.

2. Because there is often not enough overhead clearance to permit raising hang-off and cooler rails, it becomes a matter of adjusting the carcass to the rails rather than the rails to the carcass. This means that when the carcass cannot be hung, moved, or stored without proper clearance from the floor, it must be subdivided in some manner. For example, it may be necessary to quarter long cattle carcasses before hanging on an 8-foot rail. Perhaps the owner will elect to remove and rehang the chuck. Regardless of the method chosen, the objective is to keep the lowest part of the carcass, as it hangs on the rail, at least a foot off the floor during movement and storage.

Retained Cage

In the course of inspection, carcasses or products may be retained by the inspector pending further inspection and disposition. To maintain the identity and integrity of such material, there must be some means of securing it. In slaughtering plants, this means a cage in the cooler where the carcass, parts, and organs can be

locked under refrigeration, since the veterinarian may not be immediately available to make final disposition. In most small plants, cooler space is very limited, so any installation which is not used continuously and which takes up otherwise usable space creates problems.

These problems can be easily solved by installing a collapsible cage or one which consists of a gate (or gates) hinged on the cooler wall that closes off one entire end of the cooler. The entire cage or the gates can be folded flush against the walls when not in use, thus freeing this cooler space under normal circumstances. See picture on page 8.

Disposal of Inedible Materials

When operations produce a very limited amount of inedible materials, rendering companies do not ordinarily provide frequent



Stainless steel meat trees for chilling offal. These trees take very little space on the kill floor or in the cooler.

pickup service. Thus, the small slaughterer faces the problem of storing hides, feet, intestines, and the like under such conditions that they do not create a nuisance before they are removed from the premises.

Such materials may not be accumulated or stored in the slaughtering room or in any other room where product is processed. This means that a separate room or enclosed space must be provided. It must be paved, drained, and screened, with a hot water hose connection conveniently available. If pickup or other disposal is not frequent enough to avoid development of odors, maggots, or other nuisances, the room should be refrigerated. See picture on page 12.

Handling of Edible Offal

A common practice in small plants is to accumulate edible organs in a pail or tub of water on the kill floor. Sometimes this

arrangement creates a "community bath" situation since the offal is not washed to remove contamination.

A more acceptable procedure is to trim and, as necessary, wash each item under a spray head or a perforated table, and then to hang it on a meat tree for chilling. See picture on this page.

Disinfecting Contaminated Equipment

Equipment and implements that become contaminated with diseased material during dressing or inspection must, before reuse, be disinfected using water at 180° F. Larger plants use several methods to assure that water reaches this high temperature, most of which involve the use of steam from a boiler. The most common method is to pass live steam through the container of water in order to reach and maintain the desired temperature.

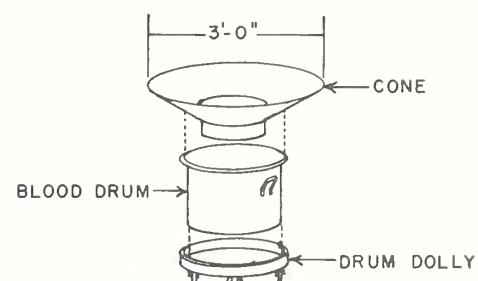
Some small plants do not have boilers to supply steam for such a purpose. Instead, the water is heated with either a self-contained or immersible electric coil. Some of these are thermostatically controlled. See picture on page 6.

Such disinfecting tanks (commonly known as sterilizers) are essential as a convenient means of disinfecting small tools such as knives. Hose outlets supplying water at 180° F. will also be needed to disinfect larger pieces of equipment such as gut buggies or inspection tables. See picture on page 12.

Disposal of Blood

Since blood cannot usually be discharged into municipal sewer lines or septic systems, its disposal is a continuing problem for many small plants. After clotting, the blood is often shoveled into drums to be hauled away by the rendering company or otherwise disposed of. The difficulty lies in collecting the blood in an acceptable and efficient manner for such disposal. See picture on page 22.

The following illustration shows one way of accomplishing this. The portable cone container arrangement is positioned under the carcass as it hangs after stunning.



Facilities for Handling Blood



A rust-resistant metal trench drain insert. This allows blood to be moved from the kill floor to the insert, then hoisted and dumped into the inedible barrel.

Country Ham Houses

Country hams are usually produced on a farm. Since, in most cases, refrigeration is natural rather than artificial, the hams are placed in cure only in the fall and winter after outside temperatures are low enough to prevent spoilage. After curing, the hams are hung to dry for several months—on the average about a year. Most of the hams are cured and hung over a short span of time, after which operations are minimal. In most cases, the hams are covered with muslin bags during the drying period.

Since the drying rooms may be considered as storage areas rather than processing rooms, impervious walls and floors will not be required in buildings used exclusively for this purpose.

Application of cold smoke will be considered as part of the drying operation. Buildings of wood construction will be acceptable for such uses if they are clean, in good repair, and constructed to prevent entry of insects and vermin.

In areas where the meat is salted, cured, packaged, sliced, or otherwise processed, impervious walls and properly paved and drained floors are necessary. Hot and cold water hose connections and hand-washing basins are also necessary for such operations.

The plant should provide welfare facilities (dressing rooms and sanitary toilets) that are adequate for the largest number of employees hired during the peak season.

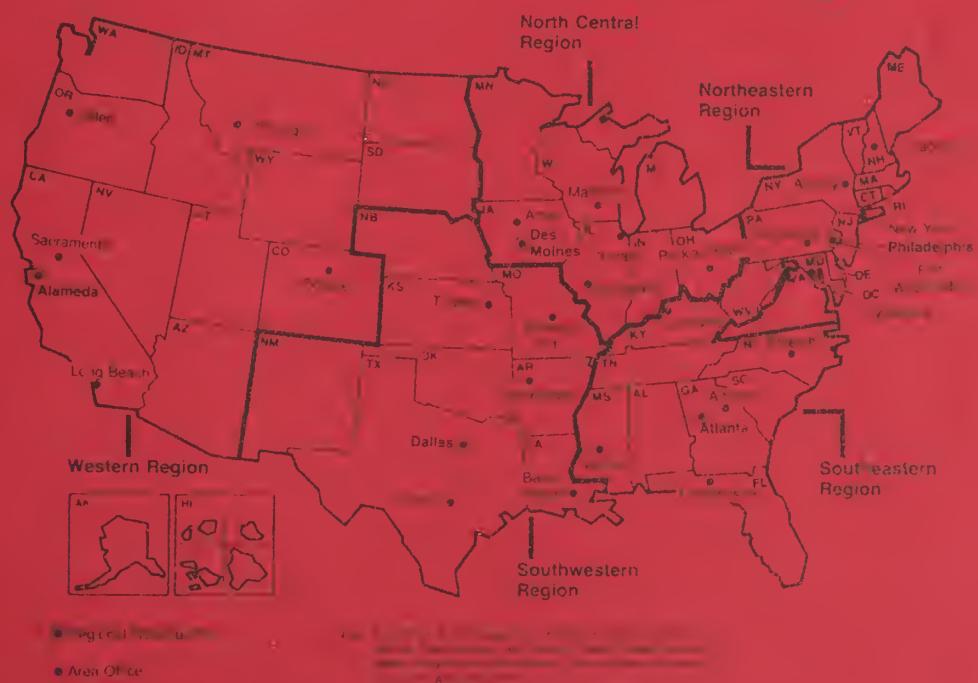
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Southwestern Dr. N. B. Isoni, Director FTS 729-0743, Comm (214) 767-9116 Dr. Charles Harmon, Deputy Director	1100 Commerce St Rm. 5 E41	Arkansas, Kansas, Louisiana, Missouri, Nebraska, New Mexico, Oklahoma, Texas
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Northeastern Dr. M. C. McNay, Director FTS 597-4217, Comm (215) 59 4217 Dr. D. L. White, Deputy Director	1421 Cherry St 7th Floor Philadelphia, PA 19102	Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Delaware, District of Columbia, Maryland, Virginia (except Northwest)

Regional Office Locations and Geographical Boundaries



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Food Safety and Inspection Service

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